

AMENDMENTS TO THE CLAIMS

CLAIM 1 (CURRENTLY AMENDED): A bearing apparatus for a bicycle hub comprising:  
a bearing member comprising:

- an inner peripheral surface for receiving a hub spindle therein;
- a bearing surface for engaging a bearing; and
- an interlock portion; and

a first lock member comprising:

- an inner peripheral surface for receiving the hub spindle therein;
- a mating portion for engaging the interlock portion of the bearing member so that the bearing member is nonrotatably fixed relative to the first lock member; and

- a spindle mating portion axially spaced from the mating portion and shaped to nonrotatably fix the first lock member relative to the hub spindle;

wherein the mating portion and the spindle mating portion are one piece.

CLAIM 2 (PREVIOUSLY PRESENTED): A bearing apparatus for a bicycle hub comprising:

a bearing member comprising:

- an inner peripheral surface for receiving a hub spindle therein;
- a bearing surface for engaging a bearing; and
- an interlock portion; and

a first lock member comprising:

- an inner peripheral surface for receiving the hub spindle therein; and
- a mating portion for engaging the interlock portion of the bearing member so that the bearing member is nonrotatably fixed relative to the first lock member;

wherein the inner peripheral surface of the bearing member comprises a press fit portion structured to be press fit to the hub spindle.

CLAIM 3 (ORIGINAL): The apparatus according to claim 1 wherein the interlock portion is disposed on an outer peripheral surface of the bearing member.

CLAIM 4 (ORIGINAL): The apparatus according to claim 3 wherein the mating portion is disposed on an inner peripheral surface of the first lock member.

CLAIM 5 (CURRENTLY AMENDED): A bearing apparatus for a bicycle hub comprising:  
a bearing member comprising:

an inner peripheral surface for receiving a hub spindle therein;

a bearing surface for engaging a bearing; and

an interlock portion;

~~The apparatus according to claim 1~~ wherein the interlock portion is disposed on an end face of the bearing member; and

a first lock member comprising:

an inner peripheral surface for receiving the hub spindle therein;

a mating portion for engaging the interlock portion of the bearing member so that the bearing member is nonrotatably fixed relative to the first lock member; and

a spindle mating portion axially spaced from the mating portion and shaped to nonrotatably fix the first lock member relative to the hub spindle.

CLAIM 6 (ORIGINAL): The apparatus according to claim 5 wherein the mating portion is disposed on an end face of the first lock member.

CLAIM 7 (CANCELED).

CLAIM 8 (CURRENTLY AMENDED): A bearing apparatus for a bicycle hub comprising:  
a bearing member comprising:

an inner peripheral surface for receiving a hub spindle therein;

a bearing surface for engaging a bearing; and

an interlock portion;

a first lock member comprising:

an inner peripheral surface for receiving the hub spindle therein;

a mating portion for engaging the interlock portion of the bearing member so that the bearing member is nonrotatably fixed relative to the first lock member; and

a spindle mating portion axially spaced from the mating portion and shaped to nonrotatably fix the first lock member relative to the hub spindle; and

~~The apparatus according to claim 1 further comprising a second lock member, wherein the second lock member comprises~~ comprising:

a spindle coupling portion for axially retaining the second lock member to the hub spindle; and

a collar that engages the first lock member for axially retaining the first lock member to the hub spindle.

CLAIM 9 (PREVIOUSLY PRESENTED): A bearing apparatus for a bicycle hub comprising:

a bearing member comprising:

an inner peripheral surface for receiving a hub spindle therein;

a bearing surface for engaging a bearing; and

an interlock portion;

a first lock member comprising:

an inner peripheral surface for receiving the hub spindle therein; and

a mating portion for engaging the interlock portion of the bearing member so that the bearing member is nonrotatably fixed relative to the first lock member; and

a second lock member comprising:

a spindle coupling portion for axially retaining the second lock member to the hub spindle; and

a collar that engages the first lock member for axially retaining the first lock member to the hub spindle;

wherein the spindle coupling portion comprises a threaded outer peripheral surface structured for mating with a threaded inner peripheral surface of the hub spindle.

CLAIM 10 (CURRENTLY AMENDED): A bearing apparatus for a bicycle hub comprising:  
a bearing member comprising:

an inner peripheral surface for receiving a hub spindle therein;

a bearing surface for engaging a bearing; and

an interlock portion;

~~The apparatus according to claim 1~~ wherein the inner peripheral surface of the bearing member comprises a female threaded portion structured to mate with a male threaded portion of the hub spindle; and

a first lock member comprising:

an inner peripheral surface for receiving the hub spindle therein;

a mating portion for engaging the interlock portion of the bearing member so that the bearing member is nonrotatably fixed relative to the first lock member; and

a spindle mating portion axially spaced from the mating portion and shaped to nonrotatably fix the first lock member relative to the hub spindle.

CLAIM 11 (PREVIOUSLY PRESENTED): A bearing apparatus for a bicycle hub comprising:

a bearing member comprising:

an inner peripheral surface having a female threaded portion structured to mate with a male threaded portion of a hub spindle;

a bearing surface for engaging a bearing; and

an interlock portion; and

a first lock member comprising:

an inner peripheral surface for receiving the hub spindle therein; and

a mating portion for engaging the interlock portion of the bearing member so that the bearing member is nonrotatably fixed relative to the first lock member; and

wherein the interlock portion is disposed on an outer peripheral surface of the bearing member.

CLAIM 12 (ORIGINAL): The apparatus according to claim 11 wherein the mating portion is disposed on an inner peripheral surface of the first lock member.

CLAIM 13 (ORIGINAL): The apparatus according to claim 12 wherein the first lock member further comprises a spindle mating portion shaped to nonrotatably fix the first lock member relative to the hub spindle.

CLAIM 14 (ORIGINAL): The apparatus according to claim 13 further comprising a second lock member, wherein the second lock member comprises:

a spindle coupling portion for axially retaining the second lock member to the hub spindle;  
and

a collar that engages the first lock member for axially retaining the first lock member to the hub spindle.

CLAIM 15 (ORIGINAL): The apparatus according to claim 14 wherein the spindle coupling portion comprises a threaded outer peripheral surface structured for mating with a threaded inner peripheral surface of the hub spindle.

CLAIM 16 (ORIGINAL): The apparatus according to claim 10 wherein the interlock portion is disposed on an end face of the bearing member.

CLAIM 17 (ORIGINAL): The apparatus according to claim 16 wherein the mating portion is disposed on an end face of the first lock member.

CLAIM 18 (ORIGINAL): The apparatus according to claim 17 wherein the first lock member further comprises a spindle mating portion shaped to nonrotatably fix the first lock member relative to the hub spindle.

CLAIM 19 (ORIGINAL): The apparatus according to claim 18 further comprising a second lock member, wherein the second lock member comprises:

a spindle coupling portion for axially retaining the second lock member to the hub spindle;  
and

a collar that engages the first lock member for axially retaining the first lock member to the hub spindle.

CLAIM 20 (PREVIOUSLY PRESENTED): A bearing apparatus for a bicycle hub comprising:

a bearing member comprising:

an inner peripheral surface having a female threaded portion structured to mate with a male threaded portion of a hub spindle;  
a bearing surface for engaging a bearing; and  
an interlock portion disposed on an end face of the bearing member; and  
a first lock member comprising:  
an inner peripheral surface for receiving the hub spindle therein;  
a mating portion disposed on an end face of the first lock member for engaging the interlock portion of the bearing member so that the bearing member is nonrotatably fixed relative to the first lock member; and  
a spindle mating portion shaped to nonrotatably fix the first lock member relative to the hub spindle; and  
a second lock member comprising  
a spindle coupling portion for axially retaining the second lock member to the hub spindle; and  
a collar that engages the first lock member for axially retaining the first lock member to the hub spindle;  
wherein the spindle coupling portion comprises a threaded outer peripheral surface structured for mating with a threaded inner peripheral surface of the hub spindle.

CLAIM 21 (ORIGINAL): A bicycle hub for rotatably mounting a wheel to a bicycle frame, wherein the hub comprises:

a hub spindle having a first end portion and a second end portion, wherein the first end portion comprises:  
a male threaded portion; and  
an interlock portion disposed axially outwardly of the male threaded portion;  
a hub body disposed around the hub spindle, wherein the hub body includes a pair of hub flanges;  
a first bearing assembly disposed at a first end of the hub body between the hub body and the hub spindle, wherein the first bearing assembly comprises:  
a first cup supported to the hub body;

a first cone comprising:

a female threaded portion for engaging the male threaded portion of the hub spindle; and

an interlock portion; and

a plurality of first rolling bearings disposed between the first cup and the first cone;

a lock member for locking the first cone with respect to the hub spindle, wherein the lock member comprises:

a first mating portion for nonrotatably mating with the interlock portion of the hub spindle; and

a second mating portion for nonrotatably mating with the interlock portion of the first cone; and

a second bearing assembly disposed at a second end of the hub body between the hub body and the hub spindle, wherein the second bearing assembly comprises:

a second cup supported to the hub body;

a second cone supported to the hub spindle; and

a plurality of second rolling bearings disposed between the second cup and the second cone.